

What is claimed and desired to be secured by Letters Patent is as follows:

[c1]

1. An arrangement for use in connection with a parking brake for a vehicle, said arrangement comprising:

a lever coupled to at least one force transmitting wire in a brake system, said lever being arranged so that upon application, said arrangement operates in two steps to achieve the intended brake power; in a first step, the lever is arranged to make a translational movement for taking up wire slack in the brake system and in a second step, the lever is arranged to rotate, whereby force transmission to the wire takes place at a higher ratio than during said first step.

[c2]

2. The arrangement according to claim 1, further comprising:

a force sensing mechanism coupled to the wire, said force sensing mechanism having a locking pawl that is arranged to be released to allow rotation first when the slack in the wire is taken up, and when the force in the wire exceeds a chosen value.

[c3]

3. The arrangement according to claim 2, further comprising:

a translation lock arranged to retain the lever in its tightened translational position;

a ratchet arranged to retain the lever in its tightened rotational position

a release arrangement configured to release the translation lock and the ratchet, the release arrangement including a release button attached to the lever, the release button operating via a link system in the lever on the locks to free them; and

the release apparatus being designed to first release the ratchet and thereafter, when the lever is in or near its rest position, then release the translation lock.

[c3]

4. The arrangement according to claim 1, further comprising:
a housing in which the force sensing mechanism is positioned, the housing being placed in a housing holder fixed to the vehicle, the lever being rotatable on a rotation axle affixed in said housing holder, the housing and lever being positioned in direct contact with each other and arranged to cooperate so that only together can they be moved or rotated in the housing holder, a locking apparatus included in the force sensing mechanism being equipped with arms that in the first brake step are arranged to prevent the housing from rotating in the housing holder, the force sensing mechanism including a spring so arranged that it is compressed by the force in the wire, the spring being dimensioned so that it is completely compressed first when the slack in the wire is taken up and the force in the wire exceeds said chosen value and the arms being arranged to be released from locking engagement with the housing holder when the spring is completely compressed.

[c5]

5. The arrangement according to claim 4, wherein the housing's translational motion is guided by at least one guide slot in the housing holder.

[c6]

6. The arrangement according to claim 5, wherein said parking brake is placed in the middle console of the vehicle beside a gear lever in order to achieve an ergonomically good solution when using the hand brake, and the direction of said guide slots is chosen to achieve the ergonomically best possible pulling direction for the driver.

[c7]

7. An arrangement for a two-stage parking brake, said arrangement comprising:
a lever mechanism connected to a brake wire, said lever mechanism configured to perform a first stage of operation in which slack is removed from said brake wire and a second stage in which a braking force is exerted on said brake wire.

[c8]

8. The arrangement according to claim 7, wherein said arrangement is configured to perform translational movement in said first stage for removing slack from said brake wire.

[c9]

9. The arrangement according to claim 7, wherein said arrangement is configured to perform rotational movement in said second stage for exerting a braking force on said brake wire.

[c10]

10. The arrangement according to claim 9, wherein said arrangement is configured to perform translational movement in said first stage for removing slack from said brake wire.

[c11]

11. The arrangement according to claim 8, wherein said arrangement includes a pin-in-slot configuration utilized for performing said translational movement in said first stage for removing slack from said brake wire.

[c12]

12. The arrangement according to claim 8, wherein said arrangement is configured to apply no force multiplication during the performance of the translational movement in said first stage for removing slack from said brake wire.

[c13]

13. The arrangement according to claim 9, wherein said arrangement is configured to apply force multiplication during the performance of the rotational movement in said first stage for removing slack from said brake wire.

[c14]

14. The arrangement according to claim 10, further comprising:
a force sensing mechanism configured to sense the amount of force being imposed on said brake wire and transition operation of said arrangement between translational and rotational movement dependent thereupon.

[c15]

15. The arrangement according to claim 10, further comprising:
a spring incorporated in said force sensing mechanism and a degree of compression of said spring controlling said transition between translational and rotational movement.